PLASTICULTURE STRAWBERRY MONITORING FORM,   KIT#___________________

PLEASE CONTACT YOUR COUNTY EXTENSION AGENT TO GET YOUR “KIT” #. This number is associated with your county.

INSTRUCTIONS: Randomly collect the most recent 20-25 trifoliate leaves and petioles from a representative area of the crop. One sample per fertilizer injector is sufficient. Use the same sample ID for all six sampling periods. Analysis will be provided for Total N,K,S,B on the leaves and Nitrate-N will be analyzed on the petioles. The cost is $48/six sampling periods.

PRODUCERS NAME: _______________________________________________________
ADDRESS:________________________________________________________________
__________________________________________ ZIP CODE____________
E-MAIL:_______________________________          FAX:
COUNTY:______________________________                    DATE SHIPPED:__________

SAMPLE INFORMATION: THE SECTION BELOW MUST BE FILLED OUT COMPLETELY.

DATE SAMPLED:___________________________________________

SAMPLING PERIOD (CIRCLE ONE)  1  2  3  4  5  6

SAMPLE IDENTIFICATION:__________________________________

VARIETY:_________________________________________________

SOIL TYPE:  CLAY      SILT LOAM      SANDY
PROCEDURE FOR LEAF/PETIOLE SAMPLING FOR STRAWBERRY PLASTICULTURE

Leaf and petiole analyses provide the best means of monitoring nutritional status and correcting deficiencies that may occur. They not only ensure that yield and quality are optimized but protect against applying excess nutrients in the environment and incurring unnecessary expense. The key to success in a nutrient monitoring program is to sample the correct tissue in a timely manner.

I. Sampling period is approximately March 1 - May 15.
II. Select plants that represent the average appearance of the crop.
III. If possible collect your samples on Sunday or Monday early afternoon
IV. Select most recent mature trifoliate including petioles from a plant. See diagram below.
V. One sample per fertilizer injector is sufficient. Samples should be collected weekly for the first three weeks of March then every 2-3 weeks is sufficient until six samples have been collected.
VI. Be consistent in your sampling. If possible, collect your samples on Sunday or Monday during early afternoon, to be mailed on Monday or Tuesday
VII. Randomly collect 20-25 trifoliates and petioles.
VIII. Strip petioles from the trifoliates and secure both in separate bundles with rubber bands or a twist tie.
IX. Process paperwork and ship to:

Agricultural Diagnostic Lab
1366 Altheimer Drive
Fayetteville, AR  72704

To avoid mailing delays, do not put “University of Arkansas” anywhere on the shipping label and ship via US Post Office or UPS. The goal is to have the sample arrive at the lab the day after the sample was collected. Collect samples on Sunday or Monday afternoon and ship on Monday. In addition, provide an E-mail address or Fax # so results can be received as soon as possible.

An analysis kit is being offered at $48/six sampling periods; please pay in advance.

Currently, a total analysis (N,K,S and B) will be provided on the trifoliates. Nitrate nitrogen (NO$_3$N) is determined on the petioles and provides an additional evaluation of nitrogen status. Petiole NO$_3$-N values should reach 3000-4000 ppm by early harvest and then gradually decline to around 500 ppm by the end of harvest. In general, NO$_3$-N levels should never be below 500 ppm. Exceptions to this rule are during early winter dormancy and after harvest.

Research at North Carolina State has demonstrated that the best fertility program in spring for plasticulture ‘Chandler’ and ‘Camarosa’ strawberries is to apply from 30-60 pounds of nitrogen per acre through the drip system. The higher rate is used on deep, sandy soils, and the lower rate on deep fine texture soils. Medium texture soils would need an intermediate rate of 45 pounds per acre. Make applications weekly starting around March 1 when new “spring growth” is visible. Initial fertilizer application rates should be 0.75 to 1.0 lbs. Nitrogen/acre/day (5.25 to 7.0 lb. Nitrogen/acre/week). These rates will be adjusted based on petiole analysis. Excessive NO$_3$-N greater than 10,000 ppm may reduce yield and fruit quality.
<table>
<thead>
<tr>
<th>N (%)</th>
<th>P (%)</th>
<th>K (%)</th>
<th>Ca (%)</th>
<th>Mg (%)</th>
<th>S (%)</th>
<th>Fe (ppm)</th>
<th>Mn (ppm)</th>
<th>Zn (ppm)</th>
<th>Cu (ppm)</th>
<th>B (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0-4.0</td>
<td>0.2-0.4</td>
<td>1.1-2.5</td>
<td>0.5-1.5</td>
<td>0.25-0.45</td>
<td>0.15-0.40</td>
<td>50-150</td>
<td>30-100</td>
<td>15-50</td>
<td>4-15</td>
<td>25-50</td>
</tr>
</tbody>
</table>

**Excessive or Toxic Nutrient Levels**

Boron becomes toxic as concentrations approach 200 ppm B. Excess boron results in a marginal leaf burn beginning first on lower leaves and progressing up the plant. Severe cases result in >10% yield loss.